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Unit 1 Quiz Practice – Exponents and Numeracy

	R	1	2	3	4
Demonstrate an understanding of the exponent rules and apply them to simplify expressions;					

1. Write each as a power.

a) $9\times9\times9$ 9^3

b) $(-7)(-7)(-7)(-7)(-7)$ $(-7)^5$

c) $\frac{4}{5}\times\frac{4}{5}\times\frac{4}{5}\times\frac{4}{5}$ $\left(\frac{4}{5}\right)^4$

tell me the number

2. Evaluate each of the following.

a) 6^2 $=36$

b) -6^2 $=-1(6\times6)$ $=-36$

c) $(-6)^2$ $=(-6)\times(-6)$ $=36$

3. Fill in the table below.

	Write in Expanded Form	Write as a Single Power	What rule can we use for simplifying?
$t^3\times t$	$t\times t\times t\times t$	t^4	add exponents
$\frac{t^5}{t^3}$	$\frac{t\times t\times t\times t\times t}{t\times t\times t}$	t^2	subtract

4. Write as a single power with a simplified exponent. Do NOT evaluate.

a) $p^5\times p^9$ p^{14}

b) $\frac{m^{15}}{m^5}$ m^{10}

c) $(a^6)^4$ a^{24}

d) $7^6\times7^1\div7^3$ $7^7\div7^3$ 7^4

e) $\frac{(5^4)^5}{5^4\times5^6}$ $=\frac{5^{20}}{5^{10}}$ $=5^{10}$

g) $\left((-3)^2(-3)^6\right)^3$ $[(-3)^8]^3$ $(-3)^{24}$

h) $\frac{(n^7)^3}{(n^5)^4}$ $\frac{n^{21}}{n^{20}}$ $=n$

f) $\left(\frac{2}{5}\right)^2\left(\frac{2}{5}\right)^8\div\left(\frac{2}{5}\right)^3$ $=\left(\frac{2}{5}\right)^{10}\div\left(\frac{2}{5}\right)^3$ $=\left(\frac{2}{5}\right)^7$

5. Simplify the following.

a) $-4a^6b^3\times5ab^2$ $-20a^7b^5$

b) $(3x^4y^3)^2$ $3^2x^8y^6$ $9x^8y^6$

c) $\frac{(4y)^2(y^5)}{2y^6}$ $\frac{4^2y^2y^5}{2y^6}=\frac{16y^7}{2y^6}=8y$

6. Substitute the given values into each expression. Then evaluate the expression. (I want to see what you know here…)

a) b^2+c^2 $b=1, c=4$ $(1)^2+(4)^2$ $1+16$ 17

b) $2x^2-x+(x-4)$ $x=-3$ $2(-3)^2-(-3)+(-3-4)$ $2(9)+3+(-7)$ $18+3-7$ $21-7$ 14